

## PATENT ABSTRACTS OF JAPAN

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(71)Applicant : HITACHI LTD

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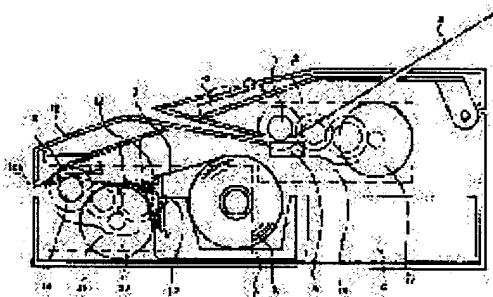
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## (54) RECORDING DEVICE

## (57)Abstract:

PURPOSE: To put curl straightening mechanism for thermosensible recording paper in action and release it by a simple mechanism and improve the filing performance of the thermosensible recording paper by relaxing the thermosensible recording paper by the reverse rotation of a pressure contact roller after the termination of recording.

CONSTITUTION: A recording part 1 is provided with thermosensible paper 8 wound in roll shape, a thermal recording head 9, a pressure contact roller 10 for conveying the thermosensible paper 8 in the pressure contact state to the thermal recording head 9, and a recording paper tray 11 for holding the thermosensible paper 8. The recording part 1 is further provided with an inverse warping part 12 for imparting inverse warp in order to straighten the curl of the thermosensible recording paper 8, a guide member 13 for guiding the recording paper 8 to the inverse warping part 12, a recording system gear 15 for rotatory- conveying the pressure contact roller 10, a motor 17, an edge 18a for manually cutting off the thermosensible recording paper 8 after recording, and the like. After the termination of recording, the pressure contact roller 10 is reversely rotated to separate the thermosensible recording paper 8 from the inverse warping part 12, so that the thermosensible recording paper 8 separated from the inverse warping part 12 hangs down loose by its own weight so as to be prevented from getting into a folding habit after receiving the mending of a strong bent part in the inverse warping part 12.



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**CLAIMS**


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**[Claim(s)]**

[Claim 1] The thermographic recording paper rolled in the shape of a roll, and the reverse warp mechanism for giving reverse curvature covering full [ of the aforementioned thermographic recording paper ] to the curvature of the aforementioned thermographic recording paper between the aforementioned thermographic recording paper and a thermal printing head, and taking curl, The pressure-welding roller for carrying out the pressure welding of the aforementioned thermographic recording paper, and conveying it to the aforementioned thermal printing head and the aforementioned thermal printing head for carrying out a print to the aforementioned thermographic recording paper In the recording device equipped with the manual cutting section of the shape of an edge prepared in the lower-part-of-a-river side rather than the aforementioned thermal printing head and the aforementioned pressure-welding roller etc. in order to cut the aforementioned thermographic recording paper after a record end with the power transfer section for rotating the aforementioned pressure-welding roller The recording device characterized by loosening the aforementioned thermographic recording paper by the inversion of the aforementioned pressure-welding roller after a record end.

[Claim 2] The recording device [ backward feed / to the manual cutting section / the back end section of the print portion of the aforementioned thermographic recording paper / after conveying the back end section of the print portion of the aforementioned thermographic recording paper ahead rather than the manual cutting section after a record end / in a claim 1 / recording device ].

[Claim 3] The thermographic recording paper rolled in the shape of a roll The reverse warp section for giving reverse curvature covering full [ of the aforementioned thermographic recording paper ] to the curvature of the aforementioned thermographic recording paper between the aforementioned thermographic recording paper and a thermal printing head, and taking curl the guide of the aforementioned thermographic recording paper prepared in the aforementioned reverse warp section's entering side -- a member The aforementioned thermal printing head for carrying out a print to the aforementioned thermographic recording paper The power transfer section for rotating the pressure-welding roller and the aforementioned pressure-welding roller for carrying out the pressure welding of the aforementioned thermographic recording paper, and conveying it to the aforementioned thermal printing head, and the auto-cutter which cuts the aforementioned thermographic recording paper automatically after a record end It is the recording device equipped with the above, and is characterized by carrying out backward feed of the thermographic recording paper after cutting by the aforementioned auto-cutter.

[Claim 4] The recording device which the back end section of the print portion of the aforementioned thermographic recording paper, and is cut with an auto-cutter in a claim 3 after conveying the back end section of the print portion of the aforementioned thermographic recording paper ahead rather than the aforementioned auto-cutter cutting section after a record end. [ to the aforementioned auto-cutter cutting section ]

[Claim 5] The amount of backward feed of the aforementioned thermographic recording paper after cutting according [ on claims 3 or 4 and ] to the aforementioned auto-cutter is a recording device which is less than the distance between the aforementioned auto-cutter and the aforementioned pressure-welding roller.

[Claim 6] The thermographic recording paper rolled in the shape of a roll The reverse warp section for giving reverse curvature covering full [ of the aforementioned thermographic recording paper ] to the curvature of the aforementioned thermographic recording paper between the aforementioned thermographic recording paper and a thermal printing head, and taking curl the guide of the aforementioned thermographic recording paper prepared in the aforementioned reverse warp section's entering side -- a member The aforementioned thermal printing head for carrying out a print to the aforementioned thermographic recording paper The power transfer section containing the slowdown system which consists of a gear train for rotating the pressure-welding roller and the aforementioned pressure-welding roller for carrying out the pressure welding of the aforementioned thermographic recording paper, and conveying it to the

aforementioned thermal printing head, and the manual cutting section of the shape of an edge prepared in the lower-part-of-a-river side rather than the aforementioned thermal printing head and the aforementioned pressure-welding roller in order to cut the aforementioned thermographic recording paper after a record end It is the recording device equipped with the above, and is characterized by backward feed [ the aforementioned thermographic recording paper ] just before a recording start.

[Claim 7] The thermographic recording paper rolled in the shape of a roll The reverse warp section for giving reverse curvature covering full [ of the aforementioned thermographic recording paper ] to the curvature of the aforementioned thermographic recording paper between the aforementioned thermographic recording paper and a thermal printing head, and taking curl the guide of the aforementioned thermographic recording paper prepared in the aforementioned reverse warp section's entering side -- a member The thermal printing head for carrying out a print to the aforementioned thermographic recording paper The power transfer section containing the slowdown system which consists of a gear train for rotating the pressure-welding roller and the aforementioned pressure-welding roller for carrying out the pressure welding of the aforementioned thermographic recording paper, and conveying it to the aforementioned thermal printing head, and the auto-cutter which cuts the aforementioned thermographic recording paper automatically after a record end It is the recording device equipped with the above, and is characterized by backward feed [ the aforementioned thermographic recording paper ] just before a recording start.

[Claim 8] The amount of backward feed of the aforementioned thermographic recording paper is a recording device which is size from the distance between the positions where the aforementioned thermographic recording paper contacts the aforementioned guide member from the position where the aforementioned thermographic recording paper contacts the aforementioned reverse warp section in claims 6 or 7.

[Claim 9] The backward-feed stage in front of the recording start of the aforementioned thermographic recording paper is a recording device it is less than 5 seconds in front of [ whose ] a recording start preferably less than 30 seconds in claims 6 or 7.

[Claim 10] It is the recording device for which the backward feed in front of the recording start of the aforementioned thermographic recording paper used rolling up of the aforementioned roll-like thermographic recording paper depended for rolling in claims 6 or 7.

[Claim 11] The recording paper rolled in the shape of a roll, and the reverse warp section for giving reverse curvature covering full [ of the aforementioned recording paper ] to the curvature of the aforementioned recording paper, and taking curl, The guide member of the aforementioned recording paper formed in the aforementioned reverse warp section's entering side, and the ink film which has an ink layer for carrying out a print to the aforementioned recording paper, The thermal printing head for fusing the aforementioned ink layer of the aforementioned ink film, and imprinting on the aforementioned recording paper, The aforementioned pressure-welding roller for carrying out the pressure welding of the aforementioned ink film and the aforementioned recording paper, and conveying them to the aforementioned thermal printing head In the recording device equipped with the power transfer section for rotating the aforementioned pressure-welding roller, the manual cutting section of the shape of an edge prepared in the lower-part-of-a-river side rather than the aforementioned thermal printing head and the aforementioned pressure-welding roller in order to cut the aforementioned thermographic recording paper after a record end, etc. The recording device characterized by loosening the aforementioned recording paper by the inversion of the aforementioned pressure-welding roller after a record end.

[Claim 12] The recording device [ backward feed / to the manual cutting section / the back end section of the print portion of the aforementioned recording paper / after conveying the back end section of the print portion of the aforementioned recording paper ahead rather than the manual cutting section after a record end / in a claim 11 / recording device ].

[Claim 13] The recording paper rolled in the shape of a roll The reverse warp section for giving reverse curvature covering full [ of the aforementioned recording paper ] to the curvature of the aforementioned recording paper between the recording paper and a thermal printing head, and taking curl the guide of the aforementioned recording paper formed in the aforementioned reverse warp section's entering side -- a member The ink film which has an ink layer for carrying out a print to the aforementioned recording paper The power transfer section for rotating the pressure-welding roller and the aforementioned pressure-welding roller for carrying out the pressure welding of the aforementioned ink film and the aforementioned recording paper, and conveying them to the thermal printing head and the aforementioned thermal printing head for fusing the aforementioned ink layer of the aforementioned ink film, and carrying out a print to the aforementioned recording paper, and the auto-cutter which cuts the aforementioned thermographic recording paper automatically after a record end It is the recording device equipped with the above, and is characterized by carrying out backward feed of the aforementioned recording paper after cutting by the aforementioned auto-cutter.

[Claim 14] The recording device which the back end section of the print portion of the aforementioned thermographic

recording paper, and is cut with an auto-cutter in a claim 13 after conveying the back end section of the print portion of the aforementioned thermographic recording paper ahead rather than the auto-cutter cutting section after a record end.

[ to the aforementioned auto-cutter cutting section ]

[Claim 15] The amount of backward feed of the aforementioned thermographic recording paper after cutting according [ on a claim 13 and ] to the aforementioned auto-cutter is a recording device which is less than the distance between the aforementioned auto-cutter and the aforementioned pressure-welding roller.

[Claim 16] The recording paper rolled in the shape of a roll, and the reverse warp section for giving reverse curvature covering full [ of the aforementioned recording paper ] to the curvature of the aforementioned recording paper between the aforementioned recording paper and a thermal printing head, and taking curl, The ink film which has the guide member of the thermographic recording paper prepared in the aforementioned reverse warp section's entering side, and an ink layer for carrying out a print to the aforementioned recording paper, The thermal printing head for fusing the ink layer of the aforementioned ink film and carrying out a print to the recording paper, The pressure-welding roller for carrying out the pressure welding of the aforementioned ink film and the aforementioned recording paper, and conveying them to the aforementioned thermal printing head The power transfer section containing the slowdown system which consists of a gear train for rotating the aforementioned pressure-welding roller, The recording device characterized by the backward feed [ roller / pressure-welding / aforementioned / the aforementioned thermal printing head and / the recording paper ] in thermal recording equipment equipped with the manual cutting section of the shape of an edge prepared in the lower-part-of-a-river side etc. just before a recording start in order to cut the aforementioned recording paper after a record end.

[Claim 17] The recording paper rolled in the shape of a roll The reverse warp section for giving reverse curvature covering full [ of the aforementioned recording paper ] to the curvature of the aforementioned recording paper between the aforementioned recording paper and a thermal printing head, and taking curl the guide of the aforementioned recording paper formed in the reverse warp section's entering side -- a member The ink film which has an ink layer for carrying out a print to the aforementioned recording paper The power transfer section for rotating the pressure-welding roller and the aforementioned pressure-welding roller for carrying out the pressure welding of the aforementioned ink film and the recording paper, and conveying them to the thermal printing head and the aforementioned thermal printing head for fusing the ink layer of the aforementioned ink film and carrying out a print to the recording paper, and the auto-cutter which cuts the aforementioned thermographic recording paper automatically after a record end It is the recording device equipped with the above, and is characterized by backward feed [ the aforementioned recording paper ] just before a recording start.

[Claim 18] The amount of backward feed of the aforementioned thermographic recording paper is a recording device which is size from the distance between the positions where the aforementioned thermographic recording paper contacts the aforementioned guide member from the position where the aforementioned thermographic recording paper contacts the aforementioned reverse warp section in claims 16 or 17.

[Claim 19] The backward-feed stage in front of the recording start of the aforementioned recording paper is a recording device it is less than 5 seconds in front of [ whose ] a recording start preferably less than 30 seconds in claims 16 or 17.

[Claim 20] It is the recording device for which the backward feed in front of the recording start of the aforementioned recording paper used rolling up of the roll-like recording paper depended for rolling in claims 16 or 17.

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## DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] this invention relates to the recording device which raised file nature in the recording device used for facsimile, a printer, etc. by keeping smooth the recording paper by which the print was carried out.

[0002]

[Description of the Prior Art] A recording device mounts and uses the recording paper for equipment in many cases in the state where it wound in the shape of a roll, for the miniaturization of equipment. In this case, in a portion with the recording paper near the core part of a roll, in order for the recording paper after record to become roll-like since the strong core set is attached to the recording paper, and to see the content of record, it bends by attaching a core set conversely, and there is troublesomeness, such as taking a peculiarity. Moreover, in the case of the recording device with a cutter, since the recording paper discharged from equipment after record rolled and dispersed, it was remarkably user-unfriendly. Then, the way formed the roller for reverse warps between a recording paper roll and the thermal recording section, and performed curl \*\*\*\* like the publication to JP,61-64655,A or JP,58-75251,U, and a control unit canceled the roller for reverse warps at the time of un-recording was taken. This method was performing the roller for reverse warps using operation of the roller for reverse warps at the time of un-recording, and the control circuit of exclusive use of release at the time of record, using a solenoid etc. as a mechanism which operates.

[0003]

[Problem(s) to be Solved by the Invention] however, in addition to the roller for the curl \*\*\*\* mechanism of the recording paper, as a release means of the deflection peculiarity prevention of the recording paper at the time of intact, a solenoid etc. is required and the control circuit of exclusive use is also required of this method -- etc. -- there was a problem of a recording device becoming complicated and expensive Therefore, the recording device which is not coped with about the deflection peculiarity at the time of first un-recording [ of the 1st sheet ] is used without canceling the curl \*\*\*\* mechanism of the recording paper.

[0004]

[Means for Solving the Problem] The purpose of this invention performs operation of the curl \*\*\*\* mechanism of the recording paper, and release by the easy mechanism, and aims at improvement in the file nature of the recording paper. It is in specifically reversing a pressure-welding roller.

[0005]

[Function] That is, prevention of the recording paper, bending as a means to perform release from the curl \*\*\*\* mechanism of the recording paper, at the time of un-recording by estranging the recording paper from the reverse warp section of a curl \*\*\*\* mechanism, and a peculiarity being attached was aimed at. [ after a record end ]

[0006]

[Example] Drawing 1 explains the example which mounted in the thermal recording equipment using the thermographic recording paper around which this invention was wound in the shape of a roll hereafter, and was applied to facsimile apparatus. This equipment consists of the control-panel section 3 which operates the Records Department 1, the reading section 2, dispatch, reception, a copy, etc., and control-section which performs control of whole equipment 4 grade. Specifically, the reading section 2 is equipped with the sensor roller 7 grade for carrying out the pressure welding of the manuscript 5, and conveying it in the reading sensor 6 and the reading sensor 6 which mainly read a manuscript 5 and a manuscript 5. moreover The Records Department 1 does the pressure welding of the thermal printing head 9 for carrying out a print to the thermographic recording paper 8 and thermographic recording paper 8 which were rolled in the shape of a roll, and the thermographic recording paper 8 to a thermal printing head 9. In order to take the recording paper tray 11 for holding the pressure-welding roller 10 for conveying, and a thermographic recording paper 8, and curl of a thermographic recording paper 8 A reverse warp In the reverse warp section 12 and the

reverse warp section 12 to give, the recording paper 8 the guide for leading -- in order to cut off the reading system gear 14 for carrying out rotation conveyance of a member 13, the sensor roller 7, and the pressure-welding roller 10 and the recording system gear 15, the reading system motor 16 and the recording system motor 17, and the thermographic recording paper 8 after record manually It has edge 18a prepared in a part of case 18. In this example, after the record end, the pressure-welding roller 10 was reversed and the thermal paper 8 was estranged from the reverse warp section 12. Consequently, the thermographic recording paper 8 estranged from the reverse warp section 12 was able to hang down gently with a self-weight, as shown in drawing 2, and it was able to prevent the crease peculiarity by the reverse warp section 12 at the time of un-recording by restoring the part crooked about intensity in the reverse warp section 12.

[0007] It is what showed the transfer control of the thermographic recording paper 8 of another example in which drawing 7 aimed at improvement in the foul nature of a record manuscript from drawing 3, and crease peculiarity prevention of control of the amount of conveyances of the recording paper 8 and the thermographic recording paper 8 at the time of un-recording is performed so that the length of a reading manuscript and a record manuscript may become equal. That is, drawing 7 shows the main portions of the Records Department 1 of the thermal recording equipment of drawing 1 from drawing 3. Drawing 3 is in a standby state, the thermographic recording paper 8 is estranged from the reverse warp section 12, and a crease peculiarity is not attached. Next, the backward feed [ the pressure-welding roller 10 is reversed by the control instruction from a control section 4 at the time of operation of reception or a copy, and / the point 19 of a thermographic recording paper 8 ] to the contact portions of a thermal printing head 9 and the pressure-welding roller 10. Next, as shown in drawing 5, in connection with rotation of the pressure-welding roller 10 and a print, tension is given to a thermographic recording paper 8 and curl \*\*\*\* is made in the reverse warp section 12. And like drawing 6 in after a print end, although the back end section of the print portion 20 is located in the contact section of a thermal printing head 9 and the pressure-welding roller 10, after the back end section of the print portion 20 is conveyed to the point rather than edge 18a, are backward feed [ like drawing 7 / to the position of edge 18a ] the back end section of the print portion 20, and it will be in a standby state. Although a user does manual cutting of the print portion by edge 18a in this state or it becomes following reception or following copy waiting with this, the length of a reading manuscript or the manuscript 5 by the copy is maintained, and can also remove the crease peculiarity of the thermographic recording paper 8 at the time of un-recording satisfactory. In addition, the operating time from drawing 5 to [ operation after a record end ] drawing 7 has the shorter good one, and this operating time has less than 2 preferably good seconds less than 10 seconds. it is possible to aim at prevention of a user's incorrect work by this preventing that a user does manual cutting of the thermographic recording paper 8 between drawing 7 from drawing 6 after a record end, and passing the false voice of a purport which a thermographic recording paper 8 carries out position appearance at the time of operation of drawing 7, and is working from drawing 5, although it is for holding a thermographic recording paper 8 certainly between a thermal printing head 9 and the pressure-welding roller 10 in the state of drawing 7

[0008] Below, the example to facsimile apparatus with an auto-cutter is shown in drawing 8. This equipment is equipped with the separation roller drive gear 24 grade which considered as the auto-cutter 21 and the mechanism [ the reading section 2 ] which can separation convey the manuscript 5 of several others at the Records Department 1 of the auto-cutter-less machine of drawing 1, read in order to rotate the separation roller 22 which separates a manuscript, the separation pad 23, and the separation roller 22, and was connected to the system gear 14. The control at the time of operation of reception with this equipment, a copy, etc. is shown in drawing 12 from drawing 9. First, as shown in drawing 9 or drawing 10, the point 19 of a thermographic recording paper 8 is located between an auto-cutter 21, a thermal printing head 9, and the pressure-welding roller 10, and a standby state is in the state where the thermographic recording paper 8 estranged from the reverse warp section 12. Next, the point 19 of a thermographic recording paper 8 is sent to the position where a thermal printing head 9 and the pressure-welding roller 10 contact like drawing 10 just before record open, and a print is started from this position. And after a record end, a thermographic recording paper 8 is conveyed by the state of drawing 12 from the state of drawing 11, and the back end section of the print portion 20 is cut by the auto-cutter 21. When the following print is carried out succeeding, a thermographic recording paper 8 is conveyed to the state of drawing 10, and a print is started. And it is the same as that of the example of drawing 1 that are standing by at the time of a record end after the thermographic recording paper 8 has estranged from the reverse warp section 12 by sending the point 19 of a thermographic recording paper 8 to the position of drawing 9 or drawing 10 from the position of an auto-cutter 21, and the crease peculiarity of the thermographic recording paper 8 at the time of un-recording is prevented. In addition, although relaxation of the thermographic recording paper 8 by the inversion of the pressure-welding roller 10 may be unable to be enough taken after a record end with an auto-cutter 21 and thermal recording equipment with the narrow interval of a thermal printing head 9, after conveying the back end section of the print portion 20 ahead after a record end in [ section / cutting / of an auto-cutter 21 ] that case, it is

possible the backward feed / the back end section of the print portion 20 / to the cutting section of an auto-cutter 21. It is possible to prevent the crease peculiarity of the thermographic recording paper 8 at the time of un-recording also in this case. Moreover, when manufacturing 2 models of auto-cutter existence, there is also an advantage that-izing of the control unit can be carried out [ \*\*\*\* ].

[0009] Although the crease peculiarity of the thermographic recording paper 8 at the time of un-recording was made into the mechanism in which it estranges from the reverse warp section 12 by the inversion of the pressure-welding roller 10, in the above example, the principal part of the thermal recording equipment of the example which uses together the inversion of the pressure-welding roller 10 and rewinding [ of the thermographic recording paper 8 around which the shape of a roll was wound ] as a mechanism in which this crease peculiarity is removed further is shown in drawing 13 and drawing 14 . In these examples, the pars basilaris ossis occipitalis of the recording paper tray 11 inclines, and the side in which a thermal printing head 9 is located has high structure. Drawing 13 is what showed the time of thermal recording, and record is performed while curl \*\*\*\* is made in the reverse warp section 12. And at this example, it is held in this state also at the time of standby. Next, simultaneously with the backward feed of a thermographic recording paper 8, the roll-like thermographic recording paper 8 rolls on right-hand side in this view by inversion operation of the pressure-welding roller 10, and a thermographic recording paper 8 is rewound the time of reception, and just before copy operation in this case. consequently, crease peculiarity section 8a of the thermographic recording paper 8 attached in the reverse warp section 12 waiting -- a guide -- it is sent to an entering side rather than a member 13 and the time of record operation performed succeedingly -- crease peculiarity section 8a -- a guide -- the crease peculiarity was removable by applying a reverse warp by the member 13 In addition, although the inclination of the pars basilaris ossis occipitalis of the recording paper tray 11 considered as 20 degrees in this example, it does not regulate at this angle and the roll-like thermographic recording paper 8 just rolls on right-hand side in drawing 14 . Moreover, since a new crease peculiarity would arise if the backward feed stage of the thermographic recording paper 8 in front of a recording start is long, although the backward feed stage had less than 5 desirable seconds, in consideration of communication control with the partner machine before reception record etc., it was able to break, when it was less than 30 seconds, and the peculiarity was able to record in the few state.

[0010] Furthermore, the example which applied this invention to thermal-ink-transfer-printing facsimile apparatus is shown in drawing 14 . the Records Department 1 which performs record of the control-panel section 3 for this equipment performing the reading section 2, the dispatch, reception, and copy operation for reading the manuscript 5 for mainly performing dispatch or a copy, and a manuscript 5, receipt information, and a copy manuscript -- and It has the control-section 4 grade which performs these control. specifically The Records Department 1 the recording paper 25 and the recording paper 25 which were rolled in the shape of a roll the guide which guides the recording paper 25 to the reverse warp section 12 for taking curl of the recording paper tray 11 on which the pars basilaris ossis occipitalis for holding inclined, and the recording paper 25, and the reverse warp section 12 -- supply and receipt to a thermal printing head 9 for the ink film 26 and the ink film 26 which have a member 13 and an ink layer The pressure welding of the thermal printing head 9, the ink film 26, and the recording paper 25 for imprinting the supply side roll 27, the rolling-up side roll 28, the entering side guide 29 that performs the guide of the ink film 26, the appearance side guide 30, and the ink layer of the ink film 26 on the recording paper 25 is carried out. It consists of auto-cutter 21 grades which perform the pressure-welding roller 10 for conveying, and cutting of the recording paper 25. Curl \*\*\*\* of the recording paper 25 in this example acts like drawing 13 and the example of drawing 14 . That is, as shown in drawing 15 and drawing 13 at the time of record, the recording paper 25 is located in left-hand side in these drawings of the recording paper tray 11, and record is performed, and curl \*\*\*\* of the recording paper 25 is made. And the recording paper 25 is held also for after a record end on the left-hand side of the recording paper tray 11. To the next, as the roll-like recording paper 25 shows drawing 14 by inversion operation of the pressure-welding roller 10 just before record operation, such as reception and a copy, simultaneously with the backward feed of the recording paper 25, it rolls on right-hand side, and the recording paper 25 is rewound in this case. consequently, crease peculiarity section 8a of the recording paper 25 attached to the recording paper 25 in the reverse warp section 12 at the time of standby -- a guide -- it is sent to an entering side rather than a member 13 and the time of record operation performed succeedingly -- crease peculiarity section 8a -- a guide -- the crease peculiarity was removable by applying a reverse warp by the member 13 In addition, although the inclination of the pars basilaris ossis occipitalis of the recording paper tray 11 also made this example 20 degrees, it does not regulate at this angle and the roll-like recording paper 25 just rolls on right-hand side in drawing 14 . Moreover, since a new crease peculiarity would arise if the backward feed stage of the recording start preceding-record paper 25 is long, although the backward feed stage had less than 5 desirable seconds, in consideration of communication control with the partner machine before reception record etc., it was able to break, when it was less than 30 seconds, and the peculiarity was able to record in the few state.

[0011]



[Effect of the Invention] According to this invention, it can prevent simple that a reverse deflection peculiarity is attached to the recording paper by the inversion of a pressure-welding roller at the time of intact as well as the ability to perform curl \*\*\*\* of the roll-like recording paper.

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## DRAWINGS

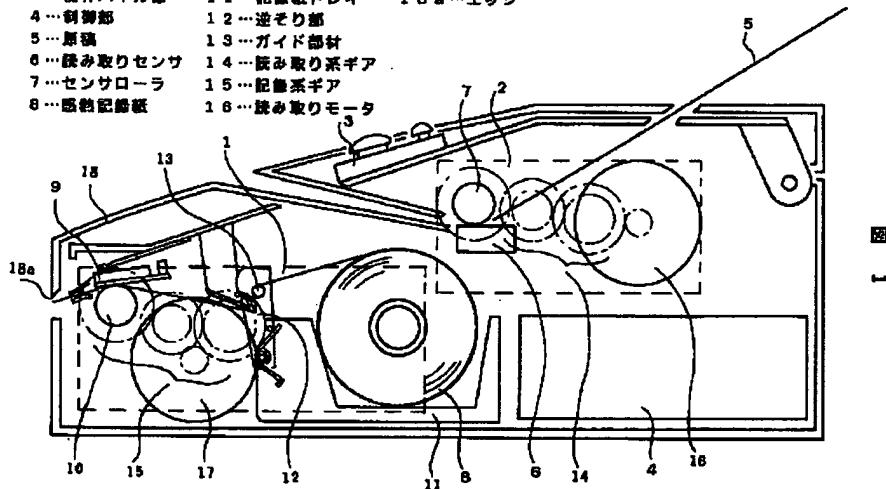
[Drawing 10]

図 10



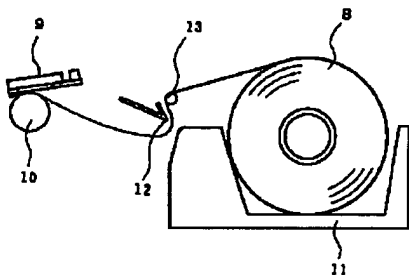
[Drawing 1]

- |             |              |             |
|-------------|--------------|-------------|
| 1...感熱記録部   | 9...感熱記録ヘッド  | 17...記録系モータ |
| 2...読み取り部   | 10...圧接ローラ   | 18...筐体     |
| 3...操作パネル部  | 11...記録紙トレイ  | 18a...エッジ   |
| 4...制御部     | 12...逆送り部    |             |
| 5...原稿      | 13...ガイド部材   |             |
| 6...読み取りセンサ | 14...読み取り系ギア |             |
| 7...センサーラ   | 15...記録系ギア   |             |
| 8...感熱記録紙   | 16...読み取りモータ |             |



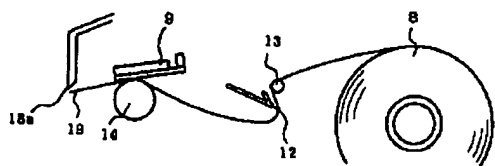
[Drawing 2]

図 2



[Drawing 3]

图 3



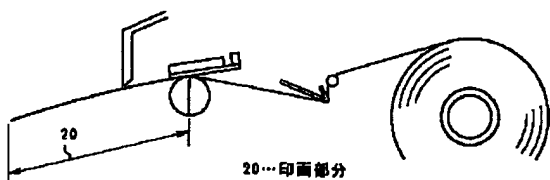
[Drawing 4]

图 4



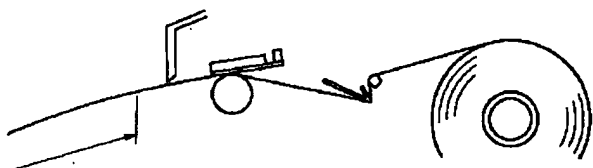
[Drawing 5]

图 5



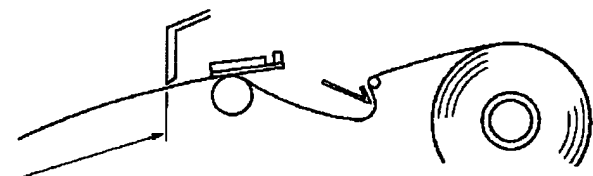
[Drawing 6]

图 6



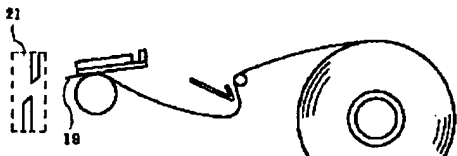
[Drawing 7]

图 7

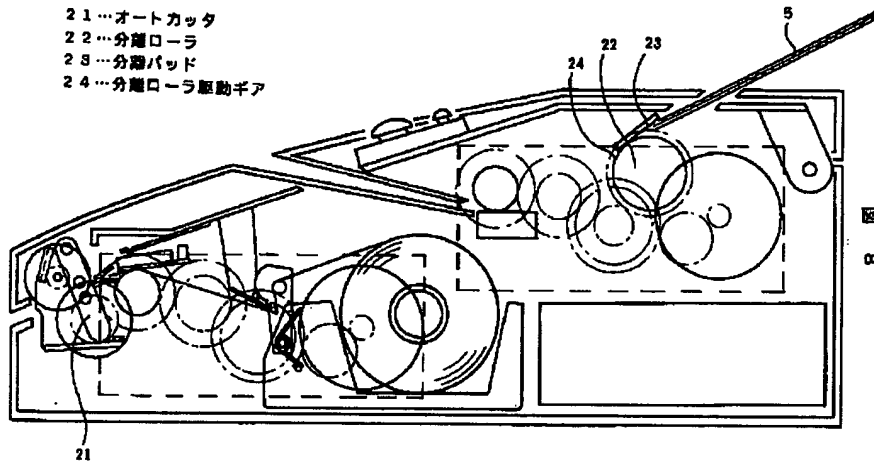


[Drawing 9]

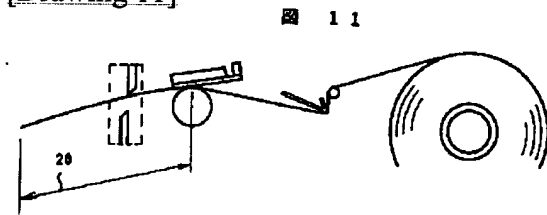
图 9



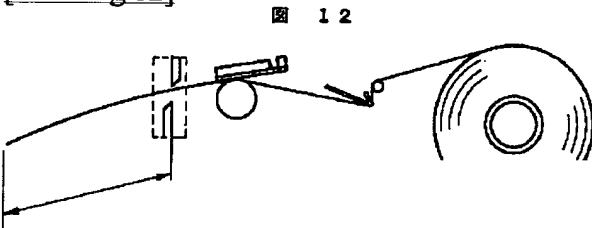
[Drawing 8]



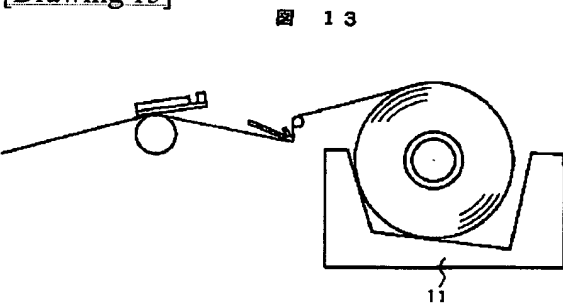
[Drawing 11]



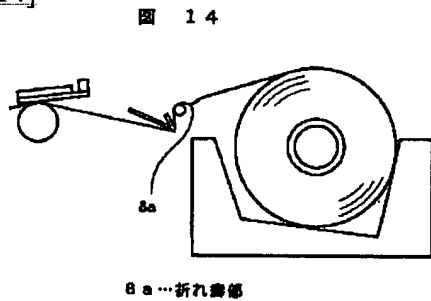
[Drawing 12]



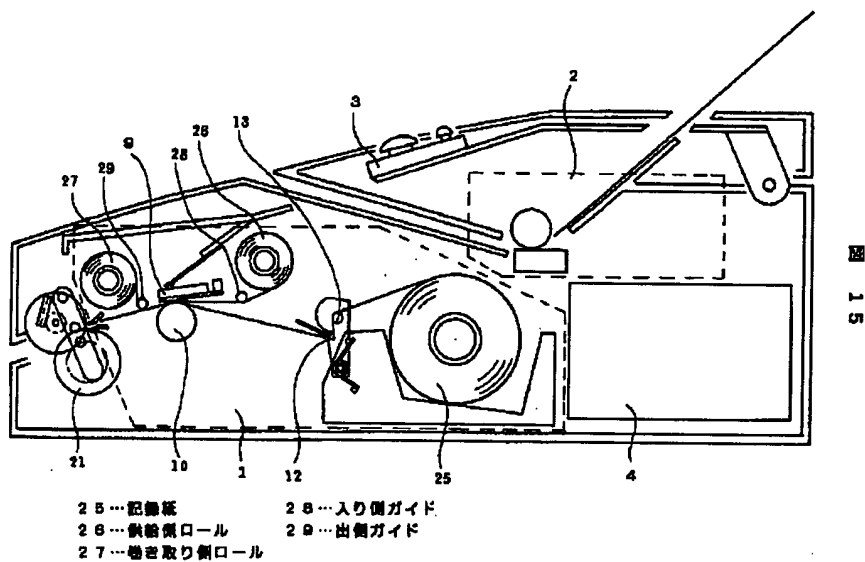
[Drawing 13]



[Drawing 14]



[Drawing 15]



[Translation done.]

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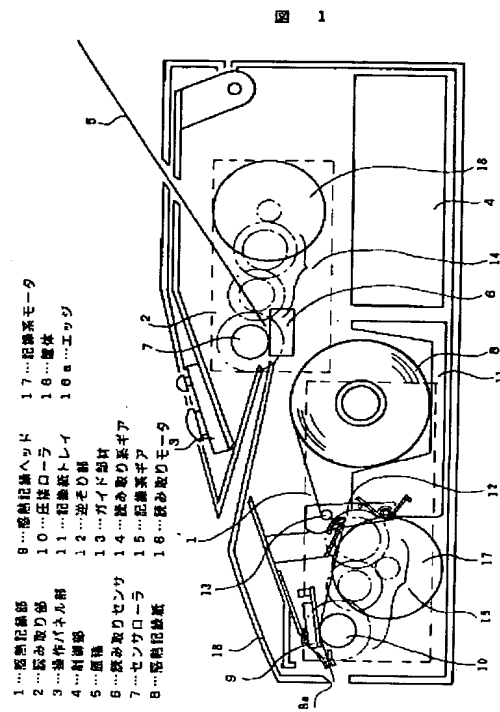
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(54) 【発明の名称】 記録装置

(57) 【要約】

【構成】 圧接ローラ10を逆転させて逆すり部12と記録紙8を離間する。もしくは、記録開始直前に記録紙8を逆送する。

【効果】 未使用時にカール取り機構によって折れ癖を防ぐことができる。



## 【特許請求の範囲】

【請求項 1】 ロール状に巻かれた感熱記録紙と、前記感熱記録紙の曲率に対し前記感熱記録紙と感熱記録ヘッドの間で前記感熱記録紙の全幅にわたって逆の曲率を付与してカールを取るための逆そり機構と、前記感熱記録紙に印画するための前記感熱記録ヘッドと、前記感熱記録ヘッドに前記感熱記録紙を圧接して搬送するための圧接ローラと、前記圧接ローラを回転するための動力伝達部と、記録終了後に前記感熱記録紙を切断するために前記感熱記録ヘッドと、前記圧接ローラよりも川下側に設けられたエッジ状の手動切断部等を備えた記録装置において、記録終了後に前記感熱記録紙を前記圧接ローラの逆転により弛緩することを特徴とする記録装置。

【請求項 2】 請求項 1 において、記録終了後に前記感熱記録紙の印画部分の後端部を手動切断部よりも前方に搬送した後、前記感熱記録紙の印画部分の後端部を手動切断部まで逆送する記録装置。

【請求項 3】 ロール状に巻かれた感熱記録紙と、前記感熱記録紙の曲率に対し前記感熱記録紙と感熱記録ヘッドの間で前記感熱記録紙の全幅にわたって逆の曲率を付与してカールを取るための逆そり部と、前記逆そり部の入り側に設けられた前記感熱記録紙のガイド部材と、前記感熱記録紙に印画するための前記感熱記録ヘッドと、前記感熱記録ヘッドに前記感熱記録紙を圧接して搬送するための圧接ローラと、前記圧接ローラを回転するための動力伝達部と、記録終了後に前記感熱記録紙を自動的に切断するオートカッタを備えた記録装置において、前記オートカッタによる切断後に感熱記録紙を送りすることを特徴とする記録装置。

【請求項 4】 請求項 3 において、記録終了後に前記感熱記録紙の印画部分の後端部を前記オートカッタ切断部よりも前方に搬送した後、前記感熱記録紙の印画部分の後端部を前記オートカッタ切断部まで逆送して、オートカッタにより切断する記録装置。

【請求項 5】 請求項 3 または 4 において、前記オートカッタによる切断後の前記感熱記録紙の逆送り量は、前記オートカッタから前記圧接ローラ間の距離以内である記録装置。

【請求項 6】 ロール状に巻かれた感熱記録紙と、前記感熱記録紙の曲率に対し前記感熱記録紙と感熱記録ヘッドの間で前記感熱記録紙の全幅にわたって逆の曲率を付与してカールをとるための逆そり部と、前記逆そり部の入り側に設けられた前記感熱記録紙のガイド部材と、前記感熱記録紙に印画するための前記感熱記録ヘッドと、前記感熱記録ヘッドに前記感熱記録紙を圧接して搬送するための圧接ローラと、前記圧接ローラを回転するためのギア列からなる減速系を含む動力伝達部と、記録終了後に前記感熱記録紙を切断するために前記感熱記録ヘッドと前記圧接ローラよりも川下側に設けられたエッジ状の手動切断部を備えた感熱記録装置において、記録開始直

前に前記感熱記録紙を送りすることを特徴とする記録装置。

【請求項 7】 ロール状に巻かれた感熱記録紙と、前記感熱記録紙の曲率に対し前記感熱記録紙と感熱記録ヘッドの間で前記感熱記録紙の全幅にわたって逆の曲率を付与してカールをとるための逆そり部と、前記逆そり部の入り側に設けられた前記感熱記録紙のガイド部材と、前記感熱記録紙に印画するための感熱記録ヘッドと、前記感熱記録ヘッドに前記感熱記録紙を圧接して搬送するための圧接ローラと、前記圧接ローラを回転するためのギア列からなる減速系を含む動力伝達部と、記録終了後に前記感熱記録紙を自動的に切断するオートカッタを備えた記録装置において、記録開始直前に前記感熱記録紙を送りすることを特徴とする記録装置。

【請求項 8】 請求項 6 または 7 において、前記感熱記録紙の逆送量は、前記逆そり部と前記感熱記録紙が当接する位置から前記ガイド部材と前記感熱記録紙が当接する位置の間の距離よりも大である記録装置。

【請求項 9】 請求項 6 または 7 において、前記感熱記録紙の記録開始直前の逆送り時期は、記録開始の前の 30 秒以内、好ましくは 5 秒以内である記録装置。

【請求項 10】 請求項 6 または 7 において、前記感熱記録紙の記録開始直前の逆送りは、ロール状の前記感熱記録紙の転がりによる巻き取りを利用した記録装置。

【請求項 11】 ロール状に巻かれた記録紙と、前記記録紙の曲率に対し前記記録紙の全幅にわたって逆の曲率を付与してカールを取るための逆そり部と、前記逆そり部の入り側に設けられた前記記録紙のガイド部材と、前記記録紙に印画するためのインク層を有するインクフィルムと、前記インクフィルムの前記インク層を溶融して前記記録紙に転写するための感熱記録ヘッドと、前記感熱記録ヘッドに前記インクフィルムと前記記録紙を圧接して搬送するための前記圧接ローラと、前記圧接ローラを回転するための動力伝達部と、記録終了後に前記感熱記録紙を切断するために前記感熱記録ヘッドと前記圧接ローラよりも川下側に設けられたエッジ状の手動切断部等を備えた記録装置において、記録終了後に前記記録紙を前記圧接ローラの逆転により弛緩することを特徴とする記録装置。

【請求項 12】 請求項 11 において、記録終了後に前記記録紙の印画部分の後端部を手動切断部よりも前方に搬送した後、前記記録紙の印画部分の後端部を手動切断部まで逆送する記録装置。

【請求項 13】 ロール状に巻かれた記録紙と、前記記録紙の曲率に対し記録紙と感熱記録ヘッドの間で前記記録紙の全幅にわたって逆の曲率を付与してカールを取るための逆そり部と、前記逆そり部の入り側に設けられた前記記録紙のガイド部材と、前記記録紙に印画するためのインク層を有するインクフィルムと、前記インクフィルムの前記インク層を溶融して前記記録紙に印画するため

の感熱記録ヘッドと、前記感熱記録ヘッドに前記インクフィルムと前記記録紙を圧接して搬送するための圧接ローラと、前記圧接ローラを回転するための動力伝達部と、記録終了後に前記感熱記録紙を自動的に切断するオートカッタを備えた記録装置において、前記オートカッタによる切断後に前記記録紙を逆送りすることを特徴とする記録装置。

【請求項 14】請求項 13 において、記録終了後に前記感熱記録紙の印画部分の後端部をオートカッタ切断部よりも前方に搬送した後、前記感熱記録紙の印画部分の後端部を前記オートカッタ切断部まで逆送して、オートカッタにより切断する記録装置。

【請求項 15】請求項 13 において、前記オートカッタによる切断後の前記感熱記録紙の逆送り量は、前記オートカッタから前記圧接ローラの間の距離以内である記録装置。

【請求項 16】ロール状に巻かれた記録紙と、前記記録紙の曲率に対し前記記録紙と感熱記録ヘッドの間で前記記録紙の全幅にわたって逆の曲率を付与してカールをとるための逆そり部と、前記逆そり部の入り側に設けられた感熱記録紙のガイド部材と、前記記録紙に印画するためのインク層を有するインクフィルムと、前記インクフィルムのインク層を溶解して記録紙に印画するための感熱記録ヘッドと、前記感熱記録ヘッドに前記インクフィルムと前記記録紙を圧接して搬送するための圧接ローラと、前記圧接ローラを回転するためのギア列からなる減速系を含む動力伝達部と、記録終了後に前記記録紙を切断するために前記感熱記録ヘッドと前記圧接ローラよりも川下側に設けられたエッジ状の手動切断部等を備えた感熱記録装置において、記録開始直前に記録紙を逆送することを特徴とする記録装置。

【請求項 17】ロール状に巻かれた記録紙と、前記記録紙の曲率に対し前記記録紙と感熱記録ヘッドの間で前記記録紙の全幅にわたって逆の曲率を付与してカールを取るための逆そり部と、逆そり部の入り側に設けられた前記記録紙のガイド部材と、前記記録紙に印画するためのインク層を有するインクフィルムと、前記インクフィルムのインク層を溶解して記録紙に印画するための感熱記録ヘッドと、前記感熱記録ヘッドに前記インクフィルムと記録紙を圧接して搬送するための圧接ローラと、前記圧接ローラを回転するための動力伝達部と、記録終了後に前記感熱記録紙を自動的に切断するオートカッタを備えた記録装置において、記録開始直前に前記記録紙を逆送することを特徴とする記録装置。

【請求項 18】請求項 16 または 17 において、前記感熱記録紙の逆送量は、前記逆そり部と前記感熱記録紙が当接する位置から前記ガイド部材と前記感熱記録紙が当接する位置の間の距離よりも大である記録装置。

【請求項 19】請求項 16 または 17 において、前記記録紙の記録開始直前の逆送り時期は、記録開始の前の

0 秒以内、好ましくは 5 秒以内である記録装置。

【請求項 20】請求項 16 または 17 において、前記記録紙の記録開始直前の逆送りは、ロール状の記録紙の転がりによる巻き取りを利用した記録装置。

【発明の詳細な説明】

【0001】

【産業上の利用分野】本発明はファクシミリやプリンタ等に用いられる記録装置において、印画された記録紙を平滑に保つことによりファイル性を向上させた記録装置に関する。

【0002】

【従来の技術】記録装置は装置の小型化のため、記録紙をロール状に巻いた状態で装置に実装して使用することが多い。この場合、記録紙がロールの芯部に近い部分では記録紙に強度の巻き癖が付いているため、記録後の記録紙がロール状となってしまう、記録内容を見るためには、逆に巻き癖を付けることにより曲がり癖をとる等の煩わしさがある。また、カッタ付きの記録装置の場合は、記録後に装置から排出された記録紙が転がって飛散することもあり、使い勝手が著しく悪かった。そこで、特開昭 61-64655 号もしくは、実開昭 58-75251 号公報に記載のように、記録紙ロールと感熱記録部の間に逆そり用ローラを設けてカール取りを行い、かつ、未記録時には制御装置により逆そり用ローラを解除する方法がとられていた。本方式は逆そり用ローラを作動する機構としてソレノイド等を用い、記録時、未記録時の逆そり用ローラの動作、解除を専用の制御回路を用いて行っていた。

【0003】

【発明が解決しようとする課題】しかし、本方式では、記録紙のカール取り機構のためのローラ以外に、記録紙の未使用時の曲がり癖防止の解除手段として、ソレノイド等が必要であり、専用の制御回路も必要である等、記録装置が複雑、高価なものになってしまう等の問題があった。そのため、記録紙のカール取り機構を解除しないで、最初の 1 枚目の未記録時の曲がり癖に関しては対策しない記録装置が用いられている。

【0004】

【課題を解決するための手段】本発明の目的は、記録紙のカール取り機構の動作、解除を簡単な機構で行い、記録紙のファイル性の向上を図ったものである。具体的には圧接ローラを逆転することにある。

【0005】

【作用】すなわち、記録紙のカール取り機構からの解除を行う手段として、記録終了後に記録紙を逆送して、カール取り機構の逆そり部から記録紙を離間することにより未記録時に曲がり癖が付くことの防止を図った。

【0006】

【実施例】以下、本発明をロール状に巻かれた感熱記録紙を用いた感熱記録装置に実装してファクシミリ装置に



適用した例を図 1 により説明する。本装置は記録部 1、読み取り部 2、発信、受信、コピー等の操作を行う操作パネル部 3、および、装置全体の制御を行う制御部 4 等から構成されている。具体的には、読み取り部 2 は主に原稿 5、原稿 5 を読み取る読み取りセンサ 6、読み取りセンサ 6 に原稿 5 を圧接して搬送するためのセンサローラ 7 等を備えている。また、記録部 1 はロール状に巻かれた感熱記録紙 8、感熱記録紙 8 に印画するための感熱記録ヘッド 9、感熱記録紙 8 を感熱記録ヘッド 9 に圧接して搬送するための圧接ローラ 10、感熱記録紙 8 を保持するための記録紙トレイ 11、感熱記録紙 8 のカールを取るために逆そりを付与する逆そり部 12、逆そり部 12 に記録紙 8 を導くためのガイド部材 13、センサローラ 7 および圧接ローラ 10 を回転搬送するための読み取り系ギア 14 および記録系ギア 15、読み取り系モータ 16 および記録系モータ 17、記録後の感熱記録紙 8 を手動で切り取るために筐体 18 の一部に設けられたエッジ 18a 等を備えている。本実施例では記録終了後に圧接ローラ 10 を逆転して逆そり部 12 から感熱紙 8 を離間した。この結果、逆そり部 12 から離間した感熱記録紙 8 は図 2 に示すように自重により緩やかに垂れ下がり、逆そり部 12 において強度に屈曲された個所が修復されることにより、未記録時の逆そり部 12 による折れ癖を防止することができた。

【0007】図 3 から図 7 は記録原稿のファル性の向上を図った別な実施例の感熱記録紙 8 の搬送制御を示したもので、読み取り原稿と記録原稿の長さが等しくなるように記録紙 8 の搬送量の制御と、未記録時の感熱記録紙 8 の折れ癖防止を行ったものである。すなわち、図 3 から図 7 は図 1 の感熱記録装置の記録部 1 の主要部分を示す。図 3 は待機状態であり、感熱記録紙 8 は逆そり部 12 から離間しており、折れ癖が付くことがない。つぎに、受信もしくはコピー等の動作時は、制御部 4 からの制御命令により圧接ローラ 10 が逆転し、感熱記録紙 8 の先端部 19 が感熱記録ヘッド 9 と圧接ローラ 10 の当接部分まで逆送される。つぎに、図 5 に示すように、圧接ローラ 10 の回転と印画にともない、感熱記録紙 8 には張力が付与され、逆そり部 12 でカール取りがなされる。そして、印画部分 20 の後端部は感熱記録ヘッド 9 と圧接ローラ 10 の当接部に位置するが、印画終了後は図 6 のように印画部分 20 の後端部はエッジ 18a よりも先まで搬送された後、印画部分 20 の後端部は図 7 のようにエッジ 18a の位置まで逆送されて待機状態となる。この状態でユーザが印画部分をエッジ 18a で手動切断するか、もしくはこのままで次の受信もしくはコピー待ちとなるが、読み取り原稿もしくはコピーによる原稿 5 の長さは保たれ、かつ、未記録時の感熱記録紙 8 の折れ癖も問題なく除去できる。なお、記録終了後の動作で、図 5 から図 7 に至る動作時間は短い方がよく、この動作時間は 10 秒以内、好ましくは 2 秒以内がよい。こ

れは記録終了後の図 6 から図 7 の間で感熱記録紙 8 をユーザが手動切断することを防止して、図 7 の状態で感熱記録紙 8 を感熱記録ヘッド 9 と圧接ローラ 10 の間に確実に保持するためであるが、図 5 から図 7 の動作時に感熱記録紙 8 の位置出し作業中である旨の擬似音声を出すことでユーザの誤作業の防止を図ることでよい。

【0008】つぎに、オートカット付きのファクシミリ装置への実施例を図 8 に示す。本装置は図 1 のオートカット無し機の記録部 1 にオートカット 21 と、読み取り部 2 に他数枚の原稿 5 を分離搬送可能な機構として、原稿を分離する分離ローラ 22、分離パッド 23、および、分離ローラ 22 を回転させるために読み取り系ギア 14 に接続された分離ローラ駆動ギア 24 等を備えている。本装置での受信、コピー等の動作時の制御を図 9 から図 12 に示す。最初に、待機状態は図 9 か図 10 に示すように感熱記録紙 8 の先端部 19 がオートカット 21 と感熱記録ヘッド 9 と圧接ローラ 10 の間に位置し、感熱記録紙 8 が逆そり部 12 から離間した状態にある。つぎに、記録開始前には図 10 のように感熱記録紙 8 の先端部 19 が感熱記録ヘッド 9 と圧接ローラ 10 が当接する位置に送られ、この位置から印画が開始される。そして、記録終了後は図 11 の状態から図 12 の状態に感熱記録紙 8 が搬送されて印画部分 20 の後端部がオートカット 21 により切断される。引き続きつぎの印画がされる場合は図 10 の状態まで感熱記録紙 8 が搬送されて印画が開始される。そして、記録終了時には感熱記録紙 8 の先端部 19 はオートカット 21 の位置から図 9 か図 10 の位置に送られることにより、感熱記録紙 8 が逆そり部 12 から離間した状態で待機となり、未記録時の感熱記録紙 8 の折れ癖が防止されることは図 1 の実施例と同様である。なお、オートカット 21 と感熱記録ヘッド 9 の間隔が狭い感熱記録装置では、記録終了後に圧接ローラ 10 の逆転による感熱記録紙 8 の弛緩を十分取れないことがあるが、その場合は記録終了後に印画部分 20 の後端部をオートカット 21 の切断部よりも前方に搬送した後、印画部分 20 の後端部をオートカット 21 の切断部まで逆送することでもよい。この場合も未記録時の感熱記録紙 8 の折れ癖を防止することが可能である。また、オートカット有り無しの 2 機種を製造する場合、制御装置を共有化できるという利点もある。

【0009】以上の実施例では未記録時の感熱記録紙 8 の折れ癖を圧接ローラ 10 の逆転によって逆そり部 12 から離間する機構としたが、この折れ癖をさらに除去する機構として、圧接ローラ 10 の逆転とロール状の巻かれた感熱記録紙 8 の巻き戻しを併用する実施例の感熱記録装置の主要部を図 13 と図 14 に示す。これらの実施例では記録紙トレイ 11 の底部が傾斜しており、感熱記録ヘッド 9 が位置する側が高い構造となっている。図 13 は感熱記録時を示したもので、逆そり部 12 でカール取りがなされながら記録が行われる。そして、本実施例

では待機時もこの状態で保持される。つぎに、受信時および、コピー動作の直前に圧接ローラ 10 の逆転動作により感熱記録紙 8 の逆送りと同時に、ロール状の感熱記録紙 8 が本図において右側に転がり、この際、感熱記録紙 8 を巻き戻しする。この結果、待機中に逆送り部 12 で付けられた感熱記録紙 8 の折れ癖部 8 a はガイド部材 13 よりも入り側に送られる。そして、引き続き行われる記録動作時に、折れ癖部 8 a はガイド部材 13 で逆送りがかけられることにより、折れ癖を除去することができた。なお、本実施例において記録紙トレイ 11 の底部の傾斜は  $20^\circ$  としたが、この角度に規制するものではなく、ロール状の感熱記録紙 8 が図 14 において右側に転がることができればよい。また、記録開始直前の感熱記録紙 8 の逆送時期が長いと新たな折れ癖が生じるため、逆送時期は 5 秒以内が好ましいが、受信記録前の相手機との交信制御等を考慮して、30 秒以内であれば折れ癖が少ない状態で記録を行うことができた。

【0010】さらに、本発明を感熱転写ファクシミリ装置に適用した実施例を図 14 に示す。本装置は主に、発信もしくはコピーを行うための原稿 5、原稿 5 を読み取るための読み取り部 2、発信、受信およびコピー操作を行うための操作パネル部 3、受信情報、コピー原稿の記録を行う記録部 1、および、これらの制御を行う制御部 4 等を備えており、具体的には、記録部 1 はロール状に巻かれた記録紙 25、記録紙 25 を保持するための底部が傾斜した記録紙トレイ 11、記録紙 25 のカールを取るための逆送り部 12、逆送り部 12 に記録紙 25 のガイドを行うガイド部材 13、インク層を有するインクフィルム 26、インクフィルム 26 を感熱記録ヘッド 9 に供給、収納を供給側ロール 27、巻き取り側ロール 28、インクフィルム 26 のガイドを行う入り側ガイド 29、出側ガイド 30、インクフィルム 26 のインク層を記録紙 25 に転写するための感熱記録ヘッド 9、インクフィルム 26 と記録紙 25 を圧接して搬送するための圧接ローラ 10、および、記録紙 25 の切断を行うオートカッタ 21 等から構成されている。本実施例における記録紙 25 のカール取りは図 13 および、図 14 の実施例と同様に作用する。すなわち、記録時には図 15 および図 13 に示すように、記録紙 25 は記録紙トレイ 11 のこれらの図において左側に位置して記録が行われ、かつ、記録紙 25 のカール取りがなされる。そして、記録終了後も記録紙 25 が記録紙トレイ 11 の左側に保持さ

れる。つぎに、受信および、コピー等の記録動作の直前に圧接ローラ 10 の逆転動作により記録紙 25 の逆送りと同時に、ロール状の記録紙 25 が図 14 に示すように右側に転がり、この際、記録紙 25 を巻き戻しする。この結果、待機時に記録紙 25 に逆送り部 12 で付けられた記録紙 25 の折れ癖部 8 a はガイド部材 13 よりも入り側に送られる。そして、引き続き行われる記録動作時に、折れ癖部 8 a はガイド部材 13 で逆送りがかけられることにより、折れ癖を除去することができた。なお、本実施例でも記録紙トレイ 11 の底部の傾斜は  $20^\circ$  としたが、この角度に規制するものではなく、ロール状の記録紙 25 が図 14 において右側に転がることができればよい。また、記録開始直前の記録紙 25 の逆送時期が長いと新たな折れ癖が生ずるため、逆送時期は 5 秒以内が好ましいが、受信記録前の相手機との交信制御等を考慮して、30 秒以内であれば折れ癖が少ない状態で記録を行うことができた。

#### 【0011】

【発明の効果】本発明によれば、ロール状の記録紙のカール取りが行えることはもちろん、圧接ローラの逆転により未使用時に記録紙に逆の曲がり癖が付くことの防止を簡便に行うことができる。

#### 【図面の簡単な説明】

【図 1】本発明の実施例を示す側面図。

【図 2】本発明の主要部を示す側面図。

【図 3】本発明動作状態を示す側面図。

【図 4】本発明動作状態を示す側面図。

【図 5】本発明動作状態を示す側面図。

【図 6】本発明動作状態を示す側面図。

【図 7】本発明動作状態を示す側面図。

【図 8】本発明の別な実施例を示す側面図。

【図 9】本発明動作状態を示す側面図。

【図 10】本発明動作状態を示す側面図。

【図 11】本発明動作状態を示す側面図。

【図 12】本発明動作状態を示す側面図。

【図 13】本発明とは別な実施例の動作状態を示す側面図。

【図 14】本発明動作状態を示す側面図。

【図 15】本発明の別な実施例を示す側面図。

#### 【符号の説明】

8…感熱記録紙、9…感熱記録ヘッド、10…圧接ローラ、12…逆送り部、

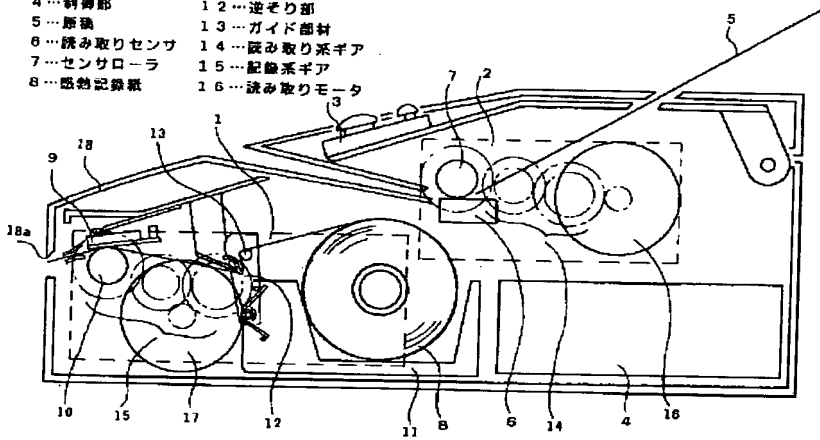
【図 10】

図 10



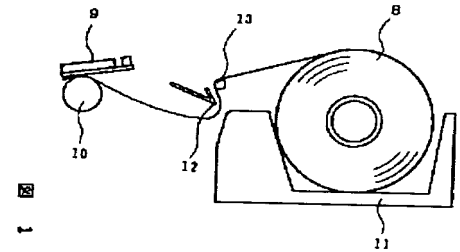
【図1】

- |           |            |           |
|-----------|------------|-----------|
| 1…感熱記録部   | 9…感熱記録ヘッド  | 17…記録系モータ |
| 2…読み取り部   | 10…圧接ローラ   | 18…筐体     |
| 3…操作パネル部  | 11…記録紙トレイ  | 18a…エッジ   |
| 4…制御部     | 12…逆送り部    |           |
| 5…原稿      | 13…ガイド部材   |           |
| 6…読み取りセンサ | 14…読み取り系ギア |           |
| 7…センサーラ   | 15…記録系ギア   |           |
| 8…感熱記録紙   | 16…読み取りモータ |           |



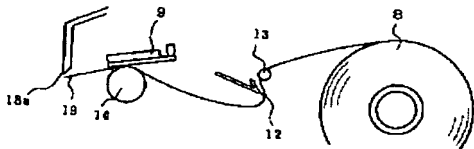
【図2】

図 2



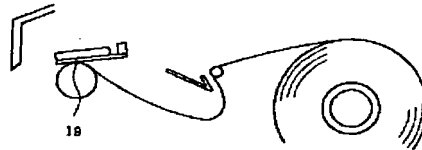
【図3】

図 3



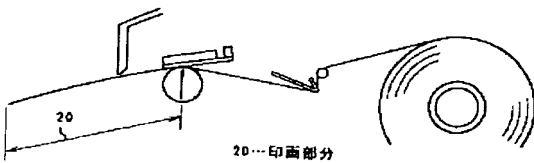
【図4】

図 4



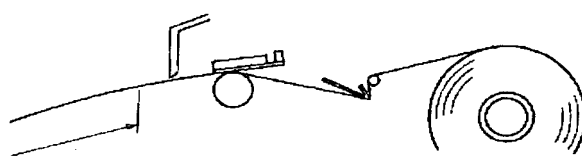
【図5】

図 5



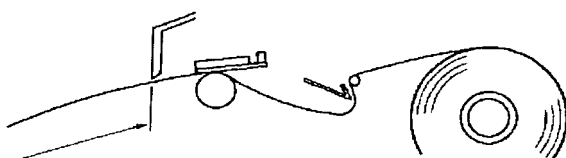
【図6】

図 6



【図7】

図 7

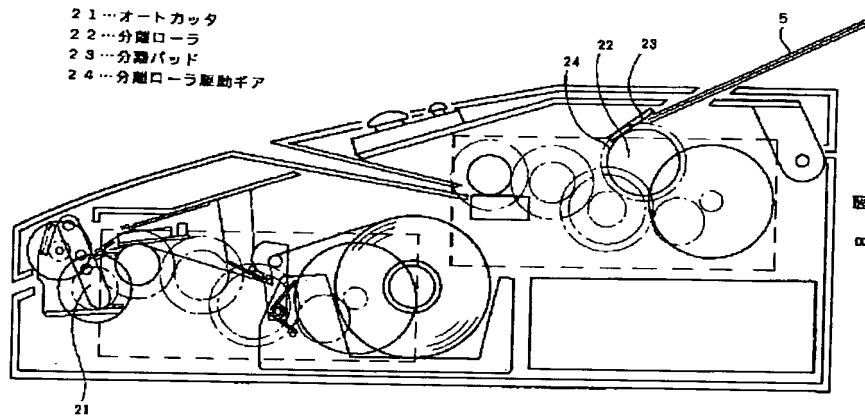


【図9】

図 9

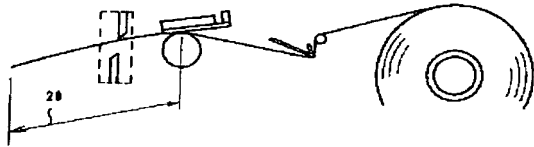


【図8】



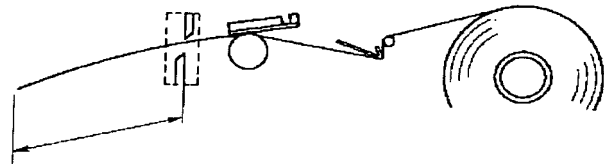
【図11】

図 11



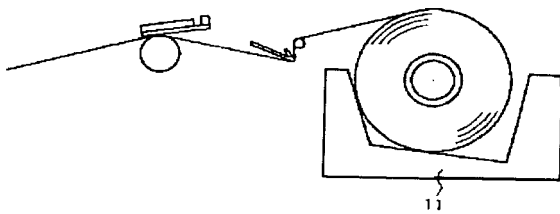
【図12】

図 12



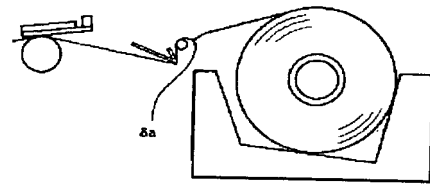
【図13】

図 13



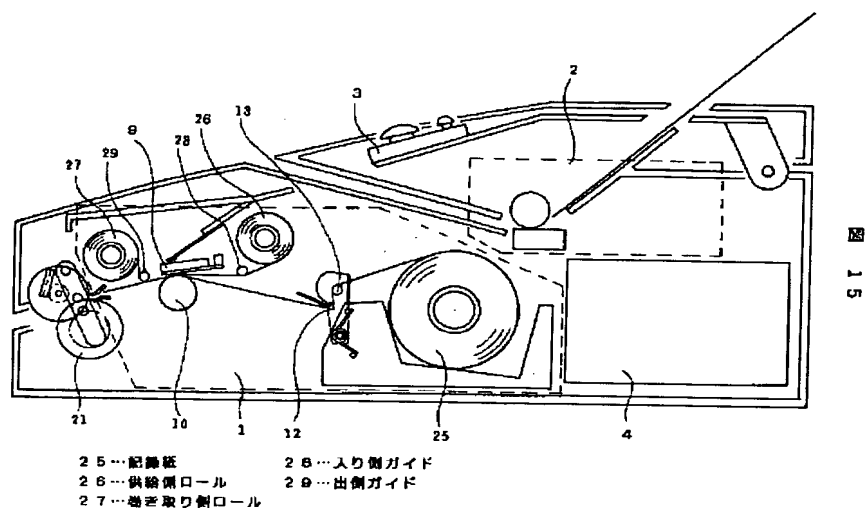
【図14】

図 14



8a...折れ曲部

【図15】



フロントページの続き

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